

1st Assignment:

Applied Networking Lab WS 23/24

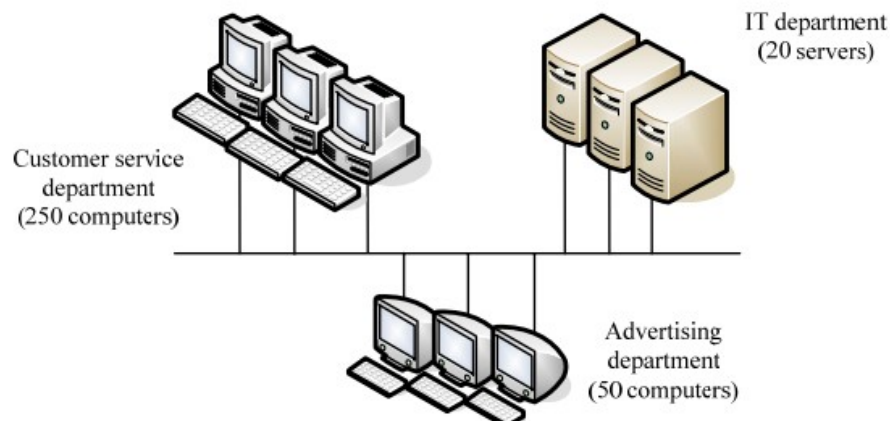
Question 1: (5 x 0.2 = 1 Point) Determine to which IP address classes the following addresses belong:

IP address	Class
201.255.12.180	
135.67.39.232	
77.39.81.52	
190.117.92.3	
223.24.182.85	

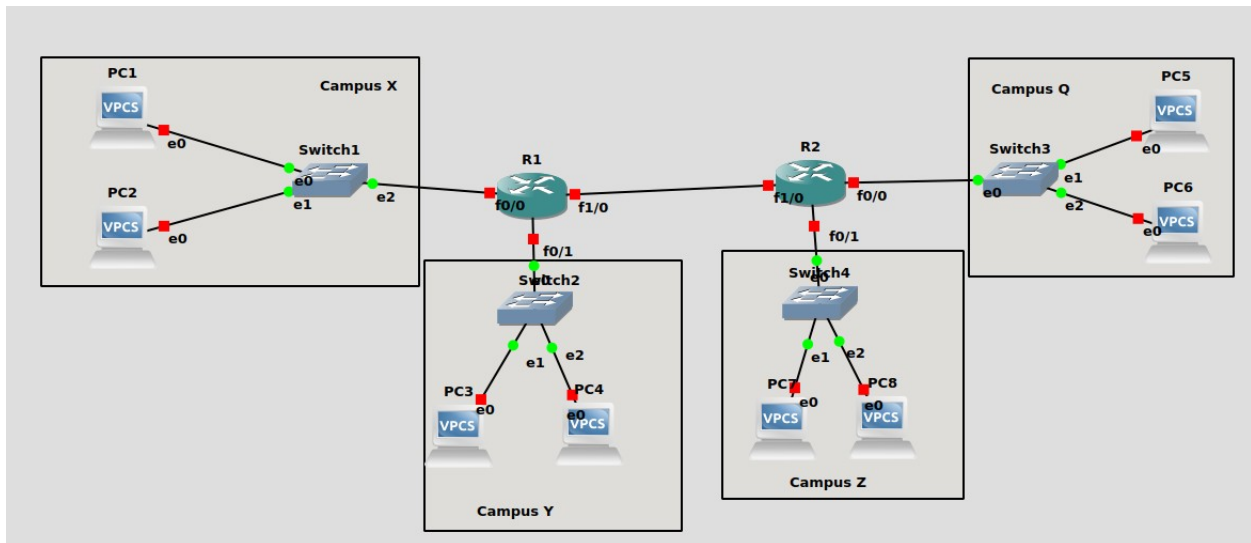
Question 2: (5 x 0.2 = 1 Point) Determine the network and host numbers of the IP address:

IP address	Network number	Host number
61.137.203.178		
129.207.77.137		
196.143.149.210		
173.233.252.206		
59.13.194.33		

Question 3: (1 + 1 = 2 points) Determine the IP address class needed for the network of an organization illustrated in the figure below. Provide IP address range for each department of the organization.



Question 4: (2 + 2 + 2 + 1 = 7 points) Recreate the shown network scenario in GNS-3:



To do so, follow these steps:

- a) Allocate IP addresses to the four different campuses (X, Y, Z, Q):
 - Assign IP addresses from different classes (A, B, C) to each campus.
 - For example:
 - Campus X: 192.168.1.0/24
 - Campus Y: 10.0.0.0/16
 - Campus Z: 172.16.0.0/20
 - Campus Q: 192.168.100.0/26
- b) Configure each campus domain as a separate collision domain:
 - Configure VLANs on the switches to separate the campuses.
 - Assign the appropriate ports to each VLAN to keep the campuses isolated.
- c) Verify the expected outcomes:
 - Test connectivity by pinging between devices in different campuses.
 - Provide snapshots of each pinging device in the worksheet solution.
- d) Show IP route:
 - Use the appropriate command (e.g., "show ip route") on each router to display the routing table.
 - Provide the snapshots of each routing table in the worksheet solution.

Due Date: Thursday, November 16th, 2023, 10:00 am

Upload all relevant files (answers to theoretical questions as either PDF or .txt plus GNS-3 config files, etc.) to ISIS:

<https://isis.tu-berlin.de/course/view.php?id=35211>

Put the names and Student ID numbers (Matrikelnummer) of **all** your group members on your solution!